

What is claimed is:

1. An electronic shelf label system comprising:
a base station including first wireless downlink communication circuitry and first wireless uplink communication circuitry operating in a different mode than the first wireless downlink communication circuitry; and
an electronic shelf label including second wireless downlink communication circuitry for receiving messages from first wireless downlink communication of the base station, and second wireless uplink communication circuitry for sending messages to first wireless uplink communication of the base station.

2. The system of claim 1, further comprising a computer coupled to the base station via a cable for sending messages to the electronic shelf label via the first and second wireless downlink communication circuitries, and for receiving messages from the electronic shelf label via the first and second wireless uplink communication circuitries.

3. The system of claim 1, wherein the first and second wireless downlink communication circuitries communicate at a first frequency and the first and second wireless uplink communication circuitries communicate at a second frequency different than the first frequency.

4. The system of claim 1, wherein the first and second wireless downlink communication circuitries communicate in a first communication band and the first and second wireless uplink communication circuitries communicate in a second

communication band different than the first communication band.

5. The system of claim 1, wherein the first and second wireless downlink communication circuitries communicate at a frequency of about 2.4 GHz and the first and second wireless uplink communication circuitries communicate at an infrared frequency.

6. The system of claim 1, wherein the first and second wireless downlink communication circuitries communicate at a frequency of about 2.4 GHz and the first and second wireless uplink communication circuitries communicate through inductive coupling.

7. The system of claim 1, wherein the first and second wireless downlink communication circuitries communicate at a first frequency of about 2.4 GHz and the first and second wireless uplink communication circuitries communicate at a second frequency substantially lower than the first frequency.

8. The system of claim 1, wherein the second frequency is about 400 MHz.

9. An electronic shelf label system comprising:
a base station including first wireless downlink communication circuitry and first wireless uplink communication circuitry operating at a substantially lower frequency than the first wireless downlink communication circuitry;

an electronic shelf label including second wireless downlink communication circuitry for receiving messages from first wireless downlink communication of the base station, and second wireless uplink communication circuitry for sending messages to first wireless uplink communication of the base station; and

a computer coupled to the base station via a cable for sending messages to the electronic shelf label via the first and second wireless downlink communication circuitries, and for receiving messages from the electronic shelf label via the first and second wireless uplink communication circuitries.

10. A method of communicating with an electronic shelf label comprising the steps of:

a) wirelessly sending a message to the electronic shelf label by first downlink communication circuitry in a base station;

b) receiving the message by second downlink communication circuitry in the electronic shelf label;

c) wirelessly sending a response to the base station using a different mode of communication by first uplink communication circuitry in the electronic shelf label; and

d) receiving the response by second uplink communication circuitry in the base station.

11. The method of claim 10, further comprising the steps of:

e) sending the message to the base station through a cable by a computer; and

f) receiving the response through the cable by the computer.

12. A method of communicating with an electronic shelf label comprising the steps of:

a) sending a message to a base station through a cable by a computer;

b) wirelessly sending the message to the electronic shelf label using a first frequency by first downlink communication circuitry in the base station;

c) receiving the message by second downlink communication circuitry in the electronic shelf label;

d) wirelessly sending a response to the base station at a second frequency different than the first frequency by first uplink communication circuitry in the electronic shelf label;

e) receiving the response by second uplink communication circuitry in the base station; and

f) receiving the response through the cable by the computer.